ENCLOSURE 2

EPA REGION VIII MONTANA OFFICE TMDL REVIEW FORM

Document Name:	**Water Quality Restoration Plan for Metals in the Blackfoot Headwaters TMDL Planning Area (June 2003)**
Submitted by:	**MTDEQ**
Date Received:	**July 3, 2003**
Review Date:	**July 31, 2003**
Reviewer:	**Ron Steg**
Formal or Informal Review?	**FORMAL**

This document provides a standard format for the EPA Montana Office to provide comments to the Montana Department of Environmental Quality on TMDL documents provided to the EPA for either official formal, or informal review. All TMDL documents are measured against the following 12 review criteria:

1. Water Quality Impairment Status
2. Water Quality Standards
3. Water Quality Targets
4. Significant Sources
5. Total Maximum Daily Load
6. Allocation
7. Margin of Safety and Seasonality
8. Monitoring Strategy
9. Restoration Strategy
10. Public Participation
11. Endangered Species Act Compliance
12. Technical Analysis

Each of the 12 review criteria are described below to provide the rational for the review, followed by EPA's comments. This review is intended to ensure compliance with the Clean Water Act and also to ensure that the reviewed documents are technically sound and the conclusions are technically defensible. This document review form incorporates, by reference, the summary of TMDL elements presented in Enclosure 1.

1. Water Quality Impairment Status

Criterion Description – Water Quality Impairment Status

TMDL documents must include a description of the listed water quality impairments. While the 303(d) list identifies probable causes and sources of water quality impairments, the information contained in the 303(d) list is generally not sufficiently detailed to provide the reader with an adequate understanding of the impairments. TMDL documents should include a thorough description/summary of all available water quality data such that the water quality impairments are clearly defined and linked to the impaired beneficial uses and/or appropriate water quality

- ☑ Satisfies Criterion
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This document is organized by water body, where impairment status, targets, TMDL, and load allocations are discussed separately, one water body at a time. In general, the authors first evaluated all of the available data used to support the 303(d) listings followed by a review of any other data that may have been available considering water chemistry, sediment chemistry, and biology. The impairment status is clearly articulated and appears to be adequately supported by recent data. Where data is limited for a certain stream segment and/or pollutant, the data gaps are pointed out and a monitoring/adaptive management strategy is proposed to fill the data gaps.

2. Water Quality Standards

Criterion Description – Water Quality Standards

The TMDL document must include a description of all applicable water quality standards for all affected jurisdictions. TMDLs result in maintaining and attaining water quality standards. Water quality standards are the basis from which TMDL's are established and the TMDL targets are derived, including the numeric, narrative, use classification, and antidegradation components of the standards.

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For all metals except iron and manganese, the applicable water column metals standards are numeric and are presented in Circular WQB-7 Montana Numeric Water Quality Standards. Guidance values from the Secondary Maximum Contaminant Levels established by EPA are used for iron and manganese.

Additionally, in May 2000, the Montana Board of Environmental Review established temporary water quality standards for three stream segments including a portion of Mike Horse Creek, a portion of Beartrap Creek, and a portion of the Upper Blackfoot River. These temporary standards will be in place through May 31, 2008.

3. Water Quality Targets

Criterion Description – Water Quality Targets

Quantified targets or endpoints must be provided to address each listed pollutant/water body combination. Target values must represent achievement of applicable water quality standards and support of associated beneficial uses. For pollutants with numeric water quality standards, the numeric criteria are generally used as the TMDL target. For pollutants with narrative standards, the narrative standard must be translated into a measurable value. At a minimum, one target is required for each pollutant/water body combination. It is generally desirable, however, to include several targets that represent achievement of the standard and support of beneficial uses (e.g., for a sediment impairment issue it may be appropriate to include targets representing water column sediment such as TSS, embeddeness, stream morphology, up-slope conditions, and a measure of

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In general, high flow and low flow targets are proposed based on the applicable numeric criteria in WQB-7 with the appropriate hardness adjustments. The targets are based on the chronic criteria since these are the most stringent and compliance will be based on no more than one measurement for a particular metal exceeding the criteria by more than 10%. For iron and manganese, targets are based on the EPA Secondary Maximum Contaminant Levels. An aesthetic target is also proposed for iron. Sediment chemistry targets are also proposed.

And finally, to provide a direct link to the aquatic life beneficial use, macroinvertibrate and periphyton targets are proposed.

This suite of targets appears to be appropriate.

4. Significant Sources

Criterion Description – Significant Sources

TMDLs must consider all significant sources of the stressor of concern. All sources or causes of the stressor must be identified or accounted for in some manner. The detail provided in the source assessment step drives the rigor of the allocation step. In other words, it is only possible to specifically allocate quantifiable loads or load reductions to each significant source when the relative load contribution from each source has been estimated. Ideally, therefore, the pollutant load from each significant source should be quantified. This can be accomplished using site-specific monitoring data, modeling, or application of other assessment techniques. If insufficient time or resources are available to accomplish this step, a phased/adaptive management approach can be employed so long as the approach is clearly defined in the document.

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In general, the primary sources of metals are associated with historic mining. The Upper Blackfoot Mining Complex (UBMC) is the primary sources of metals loading to Beartrap Creek and Mike Horse Creek, and likely constitutes on of the most significant sources of loading to the Upper Blackfoot River. The UBMC sources have been identified and are being addressed in the ongoing UBMC mine reclamation program being conducted under the direction of the MTDEQ. Other sources outside the UBMC within the TPA are not necessarily as well understood. Section 6 of the document presents a monitoring strategy to further evaluate source contributions where data is currently limited.

5. TMDL

Criterion Description – Total Maximum Daily Load

TMDLs include a quantified pollutant reduction target. According to EPA reg (see 40 C.F.R. 130.2(i)) TMDLs can be expressed as mass per unit of time, toxicity, % load reduction, or other measure. TMDLs must address, either singly or in combination, each listed pollutant/water body combination.

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Since both low flow and high flow conditions are considered critical, the TMDLs are presented as a function of the target concentration multiplied by flow. Example low and high flow TMDLs (in lbs/day and % load reductions) are presented based on the available data. The % load reductions range from 0 – 99%.

6. Allocation

Criterion Description – Allocation

TMDLs apportion responsibility for taking actions or allocate the available assimilative capacity among the various point, nonpoint, and natural pollutant sources. Allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing of responsibility. A performance based allocation approach, where a detailed strategy is articulated for the application of BMPs, may also be appropriate for non point sources.

In cases where there is substantial uncertainty regarding the linkage between the proposed allocations and achievement of water quality standards, it may be necessary to employ a phased or adaptive management approach (e.g., establish a monitoring plan to determine if the proposed allocations are, in fact, leading to the desired water quality improvements).

Allocating load reductions to specific sources is generally the most contentious and politically sensitive component of the TMDL process. It is also the step in the process where management direction is provided to actually achieve the desired load reductions. In many ways, it is a prioritization of restoration activities that need to occur to restore water quality. For these reasons, every effort should be made to be as detailed as possible and also, to base all conclusions on the best available scientific principles.

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The nonpoint source allocation approach varies by water body and source. For the waters primarily affected by the UBMC, a performance based allocation approach has been proposed relying on the current commitments and goals of the UBMC reclamation program. For most other waters, allocations are specified for all source that have been identified to date. Where uncertainty exists regarding undefined sources, an adaptive management approach has been proposed.

A performance-based wasteload allocation is proposed for discharge from a wetland-based water treatment system designed to treat mine drainage from Mike Horse 300 Level Adit and the Anaconda Mine Adit. This point source is currently regulated under the MPDES program (MDPES Permit No. MTR0030031). It is anticipated that significant future load reductions will be needed from this source. Asarco's Implementation Plan requires them to continue to optimize the efficiency of this water treatment system. The ultimate effluent limits and allocation, will be determined in the future via adaptive management where the wasteload allocation, in combination with load allocations, satisfy the targets.

Stipulations

When MDPES Permit No. MTR0090031 is reissued; it must reflect the current effluent limit developed through the proposed performance based allocation plan. Coordination between DEQ's Water Protection Bureau and Resource Protection, Planning Bureau will be required.

7. Margin of Safety and Seasonality

Criterion Description – Margin of Safety/Seasonality

A margin of safety (MOS) is a required component of the TMDL that accounts for the uncertainty about the relationship between the pollutant loads and the quality of the receiving water body (303(d)(1)(c)). The MOS can be implicitly expressed by incorporating a margin of safety into conservative assumptions used to develop the TMDL. In other cases, the MOS can be built in as a separate component of the TMDL (in this case, quantitatively, a TMDL = WLA + LA + MOS). In all cases, specific documentation describing the rational for the MOS is required.

Seasonal considerations, such as critical flow periods (high flow, low flow), also need to be considered when establishing TMDLs , targets, and allocations.

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Margin of Safety and Seasonality are adequately applied in the subject TMDL document.

8. Monitoring Strategy

Criterion Description – Monitoring Strategy

Many TMDL's are likely to have significant uncertainty associated with selection of appropriate numeric targets and estimates of source loadings and assimilative capacity. In these cases, a phased TMDL approach may be necessary. For Phased TMDLs, it is EPA's expectation that a monitoring plan will be included as a component of the TMDL documents to articulate the means by which the TMDL will be evaluated in the field, and to provide supplemental data in the future to address any uncertainties that may exist when the document is prepared.

At a minimum, the monitoring strategy should:

- *Articulate the monitoring hypothesis and explain how the monitoring plan will test it.*
- *Address the relationships between the monitoring plan and the various components of the TMDL (targets, sources, allocations, etc.).*
- *Explain any assumptions used.*
- *Describe monitoring methods.*
- *Define monitoring locations and frequencies, and list the responsible parties.*

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Ongoing monitoring is currently required in the portion of the TPA addressed by the UBMC reclamation program. Additional data will be collected in this area as part of that program. For much of the Blackfoot Headwaters TPA the UBMC project area, additional data is required to better define impairment conditions, to delineate source areas, and to support the adaptive management approach. A conceptual monitoring strategy is proposed in the subject document to address theses needs.

9. Restoration Strategy

Criterion Description – Restoration Strategy

At a minimum, sufficient information should be provided in the TMDL document to demonstrate that if the TMDL were implemented, water quality standards would be attained or maintained. Adding additional detail regarding the proposed approach for the restoration of water quality is not currently a regulatory requirement, but is considered a value added component of a TMDL document.

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The restoration strategy for the Blackfoot River , Beartrap Creek and Mike Horse Creek relies on completion of the current water quality restoration commitments and scheduled reclamation activities specified in the UBMC Temporary Standards Implementation Plan. The goals and requirements of the temporary standards mine reclamation program are consistent with the goals of this water quality restoration plan and there is currently reasonable assurance that these activities will take place.

For areas outside of the UBMC, the approaches considered for restoration include:

- The State of Montana Mine Waste Cleanup Bureau's Abaondoned Mine Lands Reclamation Program;
- The Montana Comprehensive Environmental Cleanup and Responsibilities Act;
- The federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Additionally, other potential funding options for restoration are proposed including state and federal sources typically used to address non-point source pollution.

10. Public Participation

Criterion Description – Public Participation

The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process. Public participation should fit the needs of the particular TMDL.

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A 30-day public comment period was provided beginning December 23, 2002. DEQ's responses to public comment are presented in Appendix F.

Additionally, because a large part of this plan revolves around restoration planning efforts for the Upper Blackfoot Mining Complex, the public has had opportunity to review and comment on the temporary standards and associated implementation workplan.

11. Technical Analysis

Criterion Description – Technical Analysis

*TMDLs must be supported by an appropriate level of technical analysis. It applies to **all** of the components of a TMDL document. It is vitally important that the technical basis for **all** conclusions be articulated in a manner that is easily understandable and readily apparent to the reader. Of particular importance, the cause and effect relationship between the pollutant and impairment and between the selected targets, sources, TMDLs, and allocations needs to be supported by an appropriate level of technical analysis.*

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The level of technical analysis surrounding water quality impairment status, the targets, TMDLs, and allocations is adequate. The conclusions are sufficiently supported by the available data, supplemental studies, and supporting literature.

12. Endangered Species Act Compliance

Criterion Description – Endangered Species Act Compliance

EPA's approval of a TMDL may constitute an action subject to the provisions of Section 7 of the Endangered Species Act ("ESA"). EPA will consult, as appropriate, with the US Fish and Wildlife Service (USFWS) to determine if there is an effect on listed endangered and threatened species pertaining to EPA's approval of the TMDL. The responsibility to consult with the USFWS lies with EPA and is not a requirement under the Clean Water Act for approving TMDLs. States are encouraged, however, to participate with FWS and EPA in the consultation process and, most importantly, to document in its TMDLs the potential effects (adverse or beneficial) the TMDL may have on listed as well as candidate and proposed species under the ESA.

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The EPA will consult with the US Fish and Wildlife Service under the provisions of Section 7(a)(2) of the ESA regarding its approval of these TMDLs. For now, the approval is contingent based on the outcome of such consultation.